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BOTANICAL SERIES VOL. XI, No. 2

SPERMATOPHYTES, MOSTLY PERUVIAN—IV

BY

J. FRANCIS MACBRIDE
ASSISTANT CURATOR OF TAXONOMY

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J. Francis Macbride

In presenting another paper written at the Berlin-Dahlem herbarium, I acknowledge with gratitude my continued indebtedness to my friendly hosts. Because of the complete freedom of study permitted at Dahlem, it has been possible to elucidate Peruvian types deposited there, to, I trust, their better understanding. Misdetermination of collections is so frequent because of misinterpretation of descriptions, even when perfectly drawn, that any aid, however imperfect, should prove helpful. I hope, therefore, that my attempt to interpret the Dahlem types, as they concern Peru, will be a practical evidence of my appreciation of the privileges enjoyed in research in that great herbarium.

The present paper includes descriptions of two new species of *Scleria* by Mr. R. Gross of Berlin, based upon material obtained by Field Museum expeditions.

1. NEW CYPERACEAE

Scleria Williamsii R. Gross, spec. nov. Culmus 3–1 mm. in diam., triqueter, simplex (?), firmus, sparsim hirtus, in angulis laevis, partes circa 56 cm. altae. Vaginae angustae, circa 3 cm. longae, multistriatae, minute hirtae, ore truncatae, dense hirtae. Folia circa 24–29 cm. longa, 6 mm. lata, plana, subrigida, supra subtilissime celluloso-reticulata, nervis 2 prominentibus, glabra vel glabrescentia, in parte superiore perscabra, subtus carinata, minutissime hirta, in marginibus laevia. Panicula terminalis altera partiali axillari multo minore addita 6–8 cm. longa, 4–7 cm. lata; paniculae axillares (2) 7–11 cm. lg., 4 cm. lat., pedunculi 4.5, 2.5, (7) cm. vel 4, 3.5, (11) cm. lg.; rami 3, 4 vel 7, divaricati, basi ochrea vaginata et bractea (circa 1–2 cm. lg.) praediti, inter se circa 10, 8, 7, 8, 5, 10, 5 mm. vel 10, 9, 9, 7, 7, 10, 10, 7 mm. distantes, circa 4, 3, 2.5, 2, 1.5, 1, 1, 0.5 cm. lg., puberuli, 5-, 4-, 3-, 2- vel 1-stach. Spiculae unisexuales, solitariae, interdum longe pedicellatae, 6 mm. longae. Squamae 4–6, distichae, chartaceae, ovato-acuminatae, carinatae, fere glabrae, viridescentes, margine rubescentes. Nux quam squamae brevior globoso-trigona, circa 4 mm. longa, 3 mm. lata, alba (rarius pallide virescens), maculis leviter obscuris, minute verrucosa, parce minute pilosa, rostrum conicum plus minusve recurvum. Discus trilobus, lobi rotundati, concavi, marginibus involutis, chartaceo-coriacei, pallide brunnei.—Peru: Alto Río Huallaga, Dept. San Martín, alt. 360–900 m., August 12, 1929, *Llewelyn Williams 5823* (type, Field Museum).

Die Species ist entfernt verwandt mit *S. tenacissima* Nees oder *S. flagellum* Sw., aber sie weicht ganz erheblich ab. Recht auffällig ist die umgebogene Spitze der Nuss, ein ganz characteristisches Merkmal.

Scleria Macbrideana R. Gross, spec. nov. Culmus 3–1 mm. in diam., triqueter, in angulo retrorsum remote tenuiter spinulosus, scandens (?), vero-similiter subramosus, partes (solum visae) 37, 48 cm. altae. Vaginae 3.5–3 cm. lg., submicroscopice hirtae, multistriatae, ore subtruncatae vel abbreviato-ovatae, breviter ciliato-hirtae. Folia (vagina inclusa) circa 23–31 cm. longa, 5 mm. lata, anguste vaginata, linearia, longe acuminata, plana, supra nervis 2 prominentibus, fere glabra vel basi glabrescentia, subtus leviter carinata carina margineque retrorsum tenuiter spinulosa. Paniculae 5 adsunt, 4 axillares, laxe divaricatae, 14.5, 14.5, 12.5, 6, 5.5 cm. longae, 3.5 cm. latae; pedunculi 9, 9, 8, 2.5 cm. lg.; rhachis scabriuscula; rami 6–7, plus minusve horizontales, scabri, inter se 10, 10, 4, 4, 6, 4, 5 mm. vel 12, 10, 9, 5, 6, 4, 4 mm. distantes, basi ochrea crasso-vaginata bractea setacea (circa 3 mm. lg.) praediti; inferiores plerumque 4-stach. vel -flor. (rarius 2), 2, 2.5 vel 3.5 cm. lg., partes circa 11, 5, 4, 3 mm. lg.; superiores 1- vel 2-stach. Spiculae unisexuales, solitariae, pedicellatae, ellipticae, 5 mm. lg., 3 mm. lat.; masculae paucae. Squamae circa 9, sursum longitudine accrescentes, ovatae, carina excurrente, glabrae, rubridae. Nux conspicue exserta late conica, 3 mm. longa, 2 mm. lata, minutissime transversim albo-pilosa, intense violacea, basi saepe alba. Discus obpyramidalis, lobi crasso-coriacei, irregulariter undulati, flavido-rubri.—Peru: La Victoria on the Amazon River, Dept. Loreto, August 19, 1929, *Llewelyn Williams 2571* (type, Field Museum).

Diese Art ist leicht zu erkennen an den kleinen, breit kegelförmigen, intensiv violetten, am Grunde oft weissen Nüssen, die in Querreihen mit äusserst feinen Härchen bedeckt sind; ferner an den lockeren Rispen mit fast wagerecht abstehenden Aesten, an denen entfernt die einzelnen Aehrchen stehen. Die vegetativen Teile erinnern an *S. flagellum* Sw. und *S. tenacissima* Nees.

Rhynchospora Killipii R. Gross, spec. nov. Species imperfecte nota. Culmus circa 1.20 m. altus (pars superior 60 cm.), 3–2 mm. in diam., strictus, triqueter faciebus concaviusculis, dense striatus, glaber. Internodia 22.5, 16 cm. longa. Vaginae superiores 3.5, 2.5 cm. lg., glabrae, profunde sinuosae (circa 1 cm.). Folia superiora (1 et 0.5) circa 70 cm. longa, circa 12–14 mm. lata, linearia, longe attenuate acuminata, multistriata, supra subtilissime cellulosoreticulata; subtus tenuiter carinata, minutissime puncticulata, margine brevissime spinulosissima. Inflorescentia paniculata, stricta, 21.5 cm. longa, 8 cm. lata, interrupta (10, 1.5, 1, 1, 1, 1 cm., 5 mm., 5, 5, 5, 5 mm.); terminalis (altera partiali axillari 10 cm. distante addita). Bracteae 3 inferiores inflorescentiam longe superantes (bractea tertia 18 cm. longa, 7 mm. lata) plus minusve puberulae

margine ciliatae, interdum spinulosissimae; superiores perangustae, valde reductae. Rhachis, rami, ramuli dense breviter piloso-hirsutuli. Ramus axillaris stricte erectus, 9 cm. longus; rami 4 plus minusve patentes (6, 4, 4, 3.5 cm. longi); superiores (circa 8) approximati (2.5–1 cm.); ramuli circa 1.5–0.5 cm. longi, dense ramosi. Bracteolae 2 diversae, setaceae, ovatae. Spiculae brevissime pedunculatae vel subsessiles, solitariae, superiores saepe approximatae, oblique patentes, conico-lanceolatae, acutae, ad 17 squamae, 1-nucigerae, 5–7 mm. lg., 1 mm. lat. Squamae chartaceae, ellipticae, carinatae, mucronatae, stramineae, inferiores 10 vacuae, 11 nuculigerae; superiores involutae, lanceolatae, breviores, steriles. Stamina 3; filamenta brevia; antherae 3 mm. lg. Setae 5, aequilongae, antice scabridae. Nux nimis juvenilis; stylus divisus.—Peru: Dept. Junín, Pichis Trail, Yapas, 1,350–1,600 m., dense forest, *Killip & Smith 25566* (type, Field Museum).

Vorhanden ist ein festgeklebtes Bruchstück von 60 cm. Länge; neben der üblichen Standortsangabe steht auch die Notiz "to 4 ft. high." Auffällig ist die steife dickstielige terminale Infloreszenz mit einer 10 cm. tiefer stehenden axillaren, die dicht am Halm aufwärts ragt. Die einzelnen Aeste sind mit ihren ziemlich gleichmässig verteilten Aestchen einander sehr ähnlich. Ein recht auffälliges Merkmal sind die 3 sehr langen (2 sind allerdings nur unvollständig vorhanden) gewimperten, unteren Brakteen, an der Terminal-Infloreszenz und auch die sehr zahlreichen (cr. 17) Schuppen der Aehrchen. Die Nüsse sind leider so wenig entwickelt, dass darüber nichts gesagt werden kann.

Calyptrocarya Poeppigiana Kunth, forma **grandifolia** R. Gross, f. nov. Folia ad 2.5 cm. lata, 6 dm. longa.—Peru: Mishuyacu near Iquitos, *Klug 377* (type, Field Museum).

Although a number of collections of this species are before me, the leaves of none approach in size those of this material. It seems, therefore, worthy formal designation.

2. MONOCOTYLEDONS, MOSTLY SCITAMINEAE

Podocarpus Harmsianus Pilger, Pflanzenr. IV. 5: 68. 1903.

The Arnold Arboretum apparently regards this species and *P. montanus* (Willd.) Lodd. as the same, or at any rate that institution is authority for the identification of *Killip & Smith 22480* as the latter, although Professor Pilger refers it to the former. Little known as both species are, they appear to be well distinct, as the leaf nerve in *P. montanus* is impressed, and in *P. Harmsianus* not at all.

Elodea Potamogeton (Bert.) Espinosa, Rev. Chil. Hist. Nat. 31: 150. 1928. *Anacharis Potamogeton* (Bert.) Vict. Contr. Bot. Montr. 18: 41. 1931.

In the last paper of this series I inadvertently published the above combination as my own. Frère Marie-Victorin has given a helpful resume of the status of this group, but his arguments for discarding the name *Elodea*, which might have been well taken before the botanical congress of 1930, are of questionable significance now, since the case is one requiring interpretation of the rules and to be decided legally only by committee.

Dichromena Kuntzei (Clarke), comb. nov. *Rhynchospora Kuntzei* Clarke, Kew Bull. Add. Ser. 8: 39. 1908. *R. Uleana* Kükenth. fide Gross in Herb. Dahlem.

Mr. R. Gross has referred the plant of Ule in Herb. Dahlem to this species which, as remarked by Clarke, simulates *Pleurostachys macrantha*. It supports, from a practical standpoint, my suggestion (Field Mus. Bot. 11: 6. 1931) that at least in regional treatments the group *Pleurostachys* is best regarded as a section of *Dichromena*.

Dichromena cariciformis (Nees), comb. nov. *Rynchospora cariciformis* Nees in Mart. Fl. Bras. 2^1: 145. 1842. *R. trichophora* Nees, loc. cit. fide R. Gross.

This very unusual species with carex-like spikes has been rediscovered by Williams (*3457*) on the Río Itaya, and in the same region by Killip and Smith, according to Mr. Gross. These are, apparently, the first Peruvian records.

Cyperus cayennensis (Lam.) Britton, var. **redolens** (Maury) R. Gross, comb. nov. *C. redolens* Maury, Mém. Soc. Phys. Genève, 31: 126. *pl. 36*. 1889.

This plant is distinguishable from the typical form only by the more numerous flowers—6–8 (10)—and it may, therefore, be treated as a variety. The necessary combination does not seem to have been made under the earliest specific name, i.e. *C. cayennensis* (*C. flavus* Nees).

Carex fecunda Steud., var. **atropurpurea** (Boeckl.), comb. nov. *C. atropurpurea* Boeckl. Linnaea 39: 150. 1875.

In Field Mus. Bot. 8: 113. 1930 I suggested that this is a recognizable plant. Recently, in looking at the type again with Mr. Gross, the fact has been called to my attention with renewed force, therefore the Boeckler name may be removed from synonymy, as indicated above.

Paepalanthus aequalis (Vell.), comb. nov. *Dupatya aequalis* Vell. Fl. Flum. 1: *pl. 85;* text 36. 1827. *P. blepharocnemis* Mart. ex Koern. Fl. Bras. 3^1: 376. 1863.

As recent an authority on this group as Ruhland has questioned not at all the equality of the names of Vellozo and Martius; the former, therefore, having priority, is the name to be retained.

Juncus andicola Hook. Icon. 8: *pl. 714.* 1848 and *J. Lesueurii* Boland. Proc. Calif. Acad. Sci. 2: 179. 1863 are undoubtedly very close and perhaps the latter were better treated as a variety, but so far as Peruvian material is concerned the problem is easy, as the Californian plant certainly is not represented there, in spite of herbarium determinations to the contrary. It very doubtfully occurs in Chile and Argentina, the flowers and anthers being smaller. Buchenau's separation is not clear (cf. Pflanzenr. IV. 36: 126, 147–148. 1906) because he distinguishes the species on the proportionate length of anthers and filaments. The diagnostic character of *J. Lesueurii* seems to me to be its large anthers, nearly 2 mm. long, on a filament 0.5 mm. long. It is typically a slender plant with few-flowered or capitate inflorescence, the segments bicolored and the stems shortly sheathed at base (3–6 cm.). *J. andicola* Hook. has small anthers at most 1.25 mm. long or shorter, on filaments 0.5–1 mm. long. The *proportion* between anther and filament is therefore not a satisfactory means of distinguishing the species, but there seems to be a constant difference in the *size* of the anthers.

J. andicola was described from Ecuadorian material, and typically its anther is 1.25 mm. long, its filament nearly 1 mm. long. It has rather slender, wiry stems sheathed at base for a length of 1.5 dm. and many nearly concolored and dark flowers. It seems to be exactly matched by Colombian and Bolivian specimens, and Argentina and Chile material (referred to *J. Lesueurii*) probably belongs to it, at least as a variety.

In Peru also it has been collected, but not in exactly typical form, occurring there only as a much more robust plant, the stems above the elongate basal sheaths 5–12 mm. thick, and greatly prolonged, not infrequently 2 dm., above the inflorescence. This Peruvian state is puzzling in that it seems to exist in two forms. One, *Weberbauer 3283* from the Yananguco See in Ancash, referred by Buchenau to *J. Lesueurii*, is nearly *J. andicola* except for the greatly elongate stems. It is very young, but the anthers, though about twice as long as the filaments, are small, that is, 1 mm. long. The other form, referred by Buchenau to *J. andicola*, is so at variance that it seems

worth while to regard it as a variety, even if the plant first described is a connecting state. This is *Weberbauer 1367* from Pucará, Puno. In its almost gigantic size, its pale flowers, and particularly its smaller stamens it seems nearly specifically separable, but these characters are admittedly variable. This plant, so interesting even if only a variant, may bear the name of Mr. Schulz-Korth, and give me also the opportunity of expressing thus my indebtedness for many courtesies in herbarium work.

Juncus andicola Hook., var. **Schulz-Korthii,** var. nov., robustus, 10–12 dm. altus; caulibus crassis diam. circa 11 mm.; cataphyllis ad 1.5 dm. longis; bracteis valde elongatis; inflorescentiis dense congestis; tepalis 5–6 mm. longis pallide brunneis vel lateribus castaneis; antheris 1.2 mm. longis; filamentis circa 0.5 mm. longis; capsula vix 4 mm. longa; seminibus fuscis circa 0.6 mm. longis.—Peru: Pucará, Dept. Puno, 3,600 m., forming large stands in a lake, *Weberbauer 1367* (type, Berlin-Dahlem).

I acknowledge with appreciation the kindness of the Director of the Dahlem Museum and of Dr. Markgraf, the curator of the family, in permitting the above publication, based entirely on a study of material in their care.

Smilax gilva, spec. nov., gracilis; ramis ramulisque teretibus 3 mm. crassis laevibus viridibus non lineatis, punctatis, tuberculatis vel aculeatis; petiolis tortuosis circa 1 cm. longis, basi anguste vaginantibus, vaginis valde apiculatis ut videtur non cirrhiferis; foliis ovatis vel ovato-lanceolatis circa 10–12 cm. longis, 3.5–5.5 cm. latis vel interdum bracteiformibus, oblongo-lanceolatis, circa 2 cm. latis, basi late cuneatis, acutis, apicem versus paullo angustatis vulgo subabrupte obtuseque caudato-acuminatis, acumine 5–7 mm. longo, utrinque nitidulis, chartaceo-coriaceis fere opacis sed pellucido-punctatis, haud lineatis, undique bene laxeque reticulatis, solum subtus nervis 3 prominulis praecipue costa media, omnibus basalibus; pedunculis masc. circa 3 mm. longis; receptaculis cylindraceo-globosis 4 mm. longis; pedicellis plerumque 6 mm. longis, sepalis spathulato-obovatis 4 mm. longis, petalis paullo longioribus; antheris non apiculatis filamentis duplo longioribus.—Peru: Mishuyacu near Iquitos, Dept. Loreto, *Klug 874* (type, Field Museum).

Dr. Gleason has referred this to *S. cumanensis* Willd., which he perhaps interprets broadly enough to include it. On the specific basis established by DeCandolle, Monogr. 1. 1878, it is at variance to the type (*Herb. Willd. 18396*) in its much heavier, obtusely caudate-acuminate leaves, ellipsoid receptacles, nearly twice as large flowers, and obtuse anthers. In DeCandolle's treatment it would be sought, it seems to me, among species Nos. 57–64 or 136–141. Among the first it is most comparable to *S. floribunda* Kunth and

S. staminea Griseb. Its caudately acuminate, laxly reticulate leaves and smaller flowers distinguish it from the former and its subopaque leaves, longer petioles, more shortly vaginate, and broader perianth segments from the latter. Among the second group (Nos. 136–141) it is more at variance in its smaller flowers and different foliage.

In proposing a number of new species of *Smilax* it may not be amiss to remark that they are probably new forms only in the sense that their characters do not conform exactly to those of any species described, at least so far as I have been able to determine. And, more to the point, it has not seemed to me practical to interpret described species liberally enough to include considerable variations, for to do so would have the effect of breaking down the entire classification carefully worked out by DeCandolle. When *Smilax* is really known, the number of species recognized today will be considerably reduced, but for Peru, at least, there is yet a paucity of material, so that the true limits of species can only be guessed. Especially is the problem difficult because few species are known positively in fruit and flower, collectors always securing one or the other in accord with the particular season. Furthermore, few collections show entirely mature leaves and old stems or branches. Some species, including mine, may thus be juvenile states, or their apparent differences may be sexual rather than specific.

Smilax colubrina, spec. nov., ubique tortuosa; ramis ramulisque gracilibus teretibus haud lineatis et obscure vel vix nigro-punctatis exaculeatis ad 2 mm. crassis; petiolis flexuosis tarde cirrhiferis solum ad basin inconspicue vaginatis, 1–1.5 cm. longis; foliis undique nitidulis laxe reticulatis, nervis lateralibus 2–3 basalibus supra haud subtus paullo prominulis solum costa media praecipue subtus valde notata, subcoriaceo-opacis (non punctatis), late ovatis vel ovato-lanceolatis, breviter acuminatis vel acutis plerumque circa 9 cm. longis et 4 cm. latis, margine undulatis; pedunculis masc. 3–5 mm. longis; pedicellis circa 5 mm. longis; floribus albis vel ut videtur interdum flavis 2–2.5 mm. longis numerosis (circa 25), segmentis anguste oblongis; antheris filamentis multo brevioribus exapiculatis.—Peru: Mishuyacu near Iquitos, Dept. Loreto, *Klug 1327* (type, Field Museum); also, apparently, *886* and *867*.

Referred with *Smilax gilva* to *S. cumanensis* Willd. by Dr. Gleason, from both of which its completely opaque leaves appear to distinguish it. From the former it is further separable by its smaller and different flowers. It seems to me to belong to species Nos. 97–118, and to resemble most *S. irrorata* Mart., from which, according to description, it differs in its elineate stems, shortly vaginate petioles,

and many flowers. In aspect it simulates *S. staminea* Griseb., which, however, has larger flowers.

Smilax vaga, spec. nov., liana; ramis teretiusculis vel subangulatis 2 mm. crassis, scabriusculis et ad nodos tuberculatis ubique plus minusve aculeatis, aculeis brevibus fere minutis; ramulis angulatis tortuosis fere laevigatis; petiolis 5–7 mm. longis, bene vaginatis et cirrhiferis; foliis ovatis basi rotundatis mucronulato-acutis plerumque circa 7 cm. longis, 3.5 cm. latis, margine distincte crasso-cartaligineis, membranaceis, densissime lucido-punctatis, ubique mediocriter reticulatis, nervis 5 paullo notatis, pallido-viridibus vix nitidulis; pedunculis fem. 3–4 mm. longis; receptaculis globosis vix 3 mm. crassis; pedicellis (ut videtur 12–15) circa 5 mm. longis; fructibus circa 1 cm. crassis.—Peru: Rumizapa near Tarapoto, Dept. San Martín, *Williams 6757* (type, Field Museum).

Among Peruvian species to be distinguished particularly only from *S. cumanensis* Willd., which is unarmed and smooth; but perhaps it has wandered, in which case its character seems to ally it to species 97–119, possibly to *S. cissoides* Griseb. or even to some other species, since its flowers are unknown. Precisely, however, it "fits" no description. If it is a new endemic, its prickles and well-developed tendrils suggest that its name, considered locally, may not be inappropriate.

Smilax Williamsi, spec. nov., valde tortuosa; ramis ramulisque subangulatis vel teretiusculis laevibus gracilibus epunctatis et elineatis paullo angulato-striatis vix 1.5 mm. crassis; petiolis 7–10 mm. longis ad medium vaginatis plerumque valde cirrhiferis; foliis ellipticis vel ovato-ellipticis basi apiceque rotundatis, vel apice fere truncatis brevissime mucronulatis, plerumque circa 8 cm. longis, 4 cm. latis, subcoriaceis, fere opacis, haud punctatis (vel obscure pellucidis), undique dense prominulo-reticulatis et pernitidis, nervis lateralibus vix notatis; pedunculis junioribus circa 3 mm. longis; receptaculis globosis, 3 mm. crassis; floribus ignotis.—Peru: In sandy soil, Tarapoto, Dept. San Martín, *Williams 5432* (type, Field Museum).

Notwithstanding the lack of flowers I venture to give this specimen a name because the foliage seems to be entirely distinctive. No species approaches it more, apparently, than the ornate-lineate *S. irrorata* Mart., also of Peru.

Smilax magnifolia, spec. nov., liana venusta; ramis vel ramulis subteretibus leviter striatis laevigatis haud punctatis mediocriter robustis circa 5 mm. crassis; petiolis valde curvatis circa 2.5 cm. longis ad basin vaginatis et plus minusve breviter cirrhiferis; foliis elongato-ovatis basi rotundatis, breviter acutis, apice ut videtur breviter obtuseque acuminatis, circa 3 dm. longis ad 11.5–12.5 cm.

latis, e basi ad apicem gradatim sed paullo angustatis, fere subcoriaceis subnitidulis opacis, nervis venisque solum subtus mediocriter prominulis, nervo centrali praecipue distincto, supra valde impressis; pedunculis valde compressis circa 1 cm. longis; receptaculis ovalibus fere 7 mm. longis, circa 5 mm. latis; floribus ignotis; fructibus ut videtur negris.—Peru: Mishuyacu near Iquitos, Dept. Loreto, *Klug 1000* (type, Field Museum).

Apparently comparable only to *S. phyllobola* Griseb., and seemingly distinct by the much larger leaves, longer and flat peduncles, and oval receptacle.

Smilax bella, spec. nov., liana verruculosa; ramis (vel ramulis?) leviter angulatis breviter parceque aculeatis et dense tuberculatis circa 3.5 mm. crassis; petiolis circa 2 cm. longis breviter vaginatis; foliis fere rigido-coriaceis supra nitidis griseo-viridibus subtus pallidioribus supra obscure laxeque reticulato-venosis, nervis lateralibus haud prominulis vel impressis, oblongo-elliptico-lanceolatis, basi rotundato-acutis, apice late acuminatis, circa 2.5 dm. longis et 7.5–9 cm. latis; pedunculis fem. vix 5 mm. longis; pedicellis circa 3.5 mm. longis; floribus pernumerosis (circa 50–60), viridibus, vix 2 mm. longis, segmentis lineari-oblongis; ovario subgloboso.—Peru: Mishuyacu near Iquitos, Dept. Loreto, *Klug 374* (type, Field Museum).

In foliage there is a striking similarity to the smooth-stemmed *S. syphilitica* Willd., and no doubt the relationship lies in the vicinity of that species; perhaps with *S. insignis* Kunth or *S. japicanga* Griseb., both with much thinner leaves; or, more likely, with *S. aequatorialis* (Griseb.) DC. or *S. cinnamomea* Desf., both with longer peduncles or shorter petioles, but, more especially, with deeply impressed lateral nerves above.

Eucharis Castelnaeana (Baill.), comb. nov. *Calliphruria Castelnaeana* Baill. Bull. Mens. Soc. Linn. Paris 143: 1135. 1894.

This little-known plant must, if one may judge from description, be a true *Eucharis*, notwithstanding its simulation of *Calliphruria* in its small and narrow corolla, for the latter genus has free filaments winged below and toothed at each side.

Eustephia armifera, spec. nov., conspicue foliosissima; bulbi ovoidei 4 cm. diam. in collum fere 1.5 dm. longum attenuati; foliis circa 8 oblongo-linearibus 2–3 dm. longis fere ubique 12–14 mm. latis, laxis vel ut videtur interdum prostratis; pedunculis circa 1.5 dm. longis plus minusve compressis; bracteis 2–3, majoribus fere 4 cm. longis, circa 1 cm. latis, subtruncatis; floribus circa 5, subsessilibus; perigonio 2.5–3 cm. longo, tubo vix notato in faucem sensim ampliato, laciniis definite inaequalibus ovatis subacutis 6–8 mm. longis; filamentis liberis 5 mm. longis anguste alatis ad apicem undique valde dentatis; antheris circa 7 mm. longis; stylo stamina paullo

superante sed incluso, stigmate irregulariter discoideo-folioso.—Peru: Grassy places between shrub-wood, 3,100 m., Marcapata, Dept. Cuzco, *Weberbauer 7806* (type, Field Museum).

This interesting plant seems referable only to *Eustephia*, from which it differs in its subsessile flowers and the position of the two lateral filament teeth immediately beneath the anther. The stamen therefore suggests in form the ancient spear or trident. The illusion is perfect upon the fall of the anther. Thus an innocuous-appearing plant is armed with concealed weapons! The collector noted the flowers as "blood-red without, yellowish within."

Dioscorea fodinarum Kunth, Enum. Pl. 5: 405. 1850. *D. venosa* Uline ex Knuth, Notizbl. 7: 190. 1917. *D. venosa* Uline, var. *effusa* (Griseb.) Uline ex Knuth, op. cit. 191. *D. effusa* Griseb. Kjoeb. Vidensk. Meddel. 161. 1875.

Knuth regards these collections as representing one variable species. He has, however, failed to accord with modern nomenclatorial practice of using the first published name as the species name. If his interpretation of the plant is correct, as seems probable, his two varieties must be referred to the name of Kunth rather than to that of Uline.

Heliconia Standleyi, spec. nov., robusta circa 2 m. alta glabra; petiolis circa 1.75 m. longis; foliis ad fere 3 m. longis, ad 6 dm. latis, chartaceo-coriaceis, nervis lateralibus mediocriter prominentibus, costa media 1 cm. crassa; inflorescentia pendula ad fere 2 m. longa; rhachidibus valde flexuosis manifeste 4-angulatis ad 1 cm. crassis; bracteis 2– fere 4 cm. remotis 9–10 cm. longis 3–3.5 cm. latis, obtusis vel vix acutis, late cymbiformibus; pedicellis numerosis circa 1 cm. longis; bracteolis pallidis anguste lanceolatis acuminatis circa 6 cm. longis; floribus ignotis.—Peru: Iquitos, Dept. Loreto, *Killip & Smith 27444* (type, Field Museum).

A magnificent plant, nearest, I think, to *H. rostrata* R. & P., but widely at variance in the character of rachis and bracts. The short and blunt bracts are markedly different from the tapering ones of *H. rostrata* and *H. Bihai* L., to which species it is also allied.

Heliconia tenebrosa, spec. nov., ut videtur glabra 5 dm. alta; petiolis manifeste nitidis 1.5–2 dm. longis, vix 2 mm. crassis; foliis nitidulis ut videtur intense viridibus, subellipticis, basi breviter acutis, apice longe acuminatis, circa 2.5 dm. longis, 7–8 cm. latis; inflorescentia erecta vix 2 dm. longa; bracteis inferioribus 7–8 cm. longis ad basin 1.5 cm. latis ad apicem valde angustatis, acutis, circa 1 cm. remotis; rhachidibus distincte curvato-flexuosis; floribus 3 cm. longis leviter curvatis ad basin 4 mm. latis; staminibus liberis exsertis, antheris 5 mm. longis.—Peru: Mishuyacu near Iquitos, Dept. Loreto, *Klug 1089* (type, Field Museum).

Allied to *H. cannoidea*, but the petioles long and slender. The relatively close inflorescence distinguishes it easily from *H. Schumanniana* and *H. aureorosea*.

Costus zingiberoides, spec. nov., ut videtur herba humilis; caulibus gracilibus 5–6 mm. crassis; foliis breviter petiolatis linearilanceolatis 1.5–2 dm. longis, 12–15 mm. latis, longe acuminatis, glabris, vaginis sparse hirsutulis; spicis obovoideo-cylindraceis vel demum oblongo-cylindraceis ad 10 cm. longis et 2.5 cm. crassis; bracteis late ovatis vix acutis coriaceis striatis puberulentis vel glabris infra apicem linea callosa ad 4 mm. longa munitis; corollae tubo 7 mm. longo; bracteolis hyalino-membranaceis obscure parceque puberulis truncatis 7 mm. longis; calyce obtuse trilobato circa 22 mm. longo; corolla intense flava 3 cm. longa; staminis filamento petaloideo elliptico apice integro; ovario triloculari.—Peru: Yurimaguas, Dept. Loreto, *Williams 3985* (type, Field Museum); also *3924; Killip & Smith 28000*.

A very strange plant with something of the aspect of *Zingiber* in the narrow light-colored leaves and orange-reddish bracts; and with partially the character of *Renealmia*, but the connective is certainly petaloid and the inflorescence is typically that of *Costus*. The ovary is definitely 3-celled. I have not succeeded in dissecting well a perfect corolla.

Costus scaber R. & P. Fl. Peruv. 1: 2. *pl. 3*. 1798.

Klug 922, referred recently to *C. villosissimus* Jacq., is rather this species.

Costus puchucupango, spec. nov., vix robustus ut videtur mediocriter altus, caulibus circa 1–1.5 cm. crassis; vaginis sordide fulvo-puberulis marginibus dense longe lanuginoso-ciliatis; foliis sessilibus oblongo-obovato-subellipticis, circa 2–2.5 dm. longis, 8–10 cm. latis, basi angustatis, apice caudato-acuminatis, supra glabris praeter costam mediam utrinque marginesque prominulos fulvo-pubescentes, subtus ubique minutissime parceque pallide puberulis; inflorescentia turbinato-ovoidea; bracteis late ovatis apice rotundato-acutis circa 1.5 cm. longis ut videtur rubricundis infra apicem prominente calloso-lineatis.—Peru: Yurimaguas, Dept. Loreto, *Williams 4570* (type, Field Museum).

The habit and foliage, even to color, of this plant are strikingly like those of *C. laevis* R. & P. The latter, however, is glabrous, and so marked are the two forms of pubescence on *C. puchucupango* that it seems reasonable to think it is more than a pubescent variety. Too, its inflorescence is very young, and more than likely there are distinctive floral characters. It bears some resemblance to *C. Ulei* Loes., but that species has much narrower bracts, as also *C. tarmicus*

Loes., the latter with glabrous leaves. The native name may serve also as the specific one.

Costus tarapotensis, spec. nov., *C. amazonico* ut videtur similis, foliis membranaceis supra glabris subtus conspicue fulvo-villosis; oblongo-ovato-lanceolatis, basi apiceque sensim angustatis, acuminatis, circa 3 dm. longis, 5–7 cm. latis; inflorescentia turbinato-ovoidea glabra; bracteis circa 5 cm. longis et 7 mm. latis acutis ad apicem submembranaceis; floribus ut videtur 2 cm. longis.—Peru: Tarapoto, Dept. San Martín, *Williams 6529* (type, Field Museum).

In spite of the imperfect material, I think the alliance of this plant must be with *C. amazonicus* (Loes.) Macbr., which has much broader leaves.

Dimerocostus Williamsi, spec. nov., ut videtur affinis *D. Tessmannii* sed foliis solum 10–12 cm. longis, circa 3.5 cm. latis, bracteis definite dentatis et cum calloso obscure ornatis, sepalis 2 cm. longis et seminibus brunneis 4 mm. longis; vaginis ad marginem conspicue lanuginoso-ciliatis; petiolis brevissimis circa 2 mm. latis.—Peru: Yurimaguas, Dept. Loreto, *Williams 4291* (type, Field Museum).

The foliage of this plant is nearly that of the little-known *D. Guttierezii* Ktze., but the pubescent sheaths, narrow petioles, and brown instead of black seeds would seem to distinguish it. Except in their much smaller size, the leaves resemble those of *D. Tessmannii*, but as the inflorescence is in fruit (detached, however), it does not seem likely that the leaves are not fully grown. Besides, there appear to be other differences, as indicated. *D. bolivianus* (Rusby) Loes. is apparently related, having also the bicarinate bracteoles of all these species, but they are described as ciliate, which is not at all the case for *D. Williamsi*. To be considered is *D. elongatus* Huber, but it has deeply fissured bracteoles and puberulent leaves. It seems, therefore, necessary to admit another species into this rapidly growing genus and it, the fifth for Peru, may fitly bear the name of the energetic collector.

Renealmia lativagina, spec. nov., robusta circa 3 m. alta; foliis longe petiolatis oblongo-ellipticis abrupte et breviter caudato-acuminatis, basi sensim gradatim angustato-cuneatis, circa 8 dm. longis fere 2 dm. latis, glabris vel fere glabris; pedunculis basalibus dense cum vaginis glabris chartaceo-coriaceis imbricatis 1–1.5 dm. longis circa 2.5 cm. latis, utrinque vestitis; racemis simplicibus 3 dm. longis; floribus solitariis; rhachidibus dense sed haud velutine pubescentibus; bracteolis calycibusque leviter puberulis 3-dentatis circa 2.5 cm. longis; pedicellis 7 mm. longis; corollis fere 3 cm. longis, lobis et labello ut videtur subaequalibus.—Peru: Iquitos, Dept. Loreto, *Killip & Smith 27099* (type, Field Museum).

Undoubtedly referable to the *Racemosae*, but not to any species as yet described therein. So large are the sheaths, considered proportionately to the rest of the plant and to those of the other species, that they could not inaccurately be described as enormous. The pubescence of the inflorescence is a dense but not velvety puberulence. The bracts, except young ones about the buds, are too broken for description; the buds are oblong-obovate, acute, 2.5 cm. long, and 1 cm. wide.

At the New York Botanical Garden this was considered the same as *R. thyrsoidea* (R. & P.) P. & E., with spike dense even in fruit and rarely 1.5 dm. long, the pedicels 2 mm. long, and the sheaths soft, elliptic, and only 3–5 cm. long.

Calathea Loeseneri, spec. nov., ut videtur circa 3 dm. alta; petiolis circa 13 cm. longis ad medium vaginatis cum vaginis membranaceis minute parceque pubescentibus; foliis valde inaequilateris ovato-ellipticis basi acutis apice anguste acuminatis fere 1.5 dm. longis, 5.5 cm. latis, supra glabris, subtus minutissime strigillosis praecipue ad nervos; pedunculis circa 3 dm. longis minute adpresseque pilosis vel superne plus minusve longe villosis; spicis subturbinatis vel anguste ovoideis circa 7 cm. longis et 2–2.5 cm. latis; bracteis inferioribus subcoriaceis solum puberulis vel interdum etiam praecipue ad basin villosis, 2–2.5 cm. longis, apice rotundatis, superioribus (sterilibus) erectis anguste ovato-lanceolatis acutis vel acuminatis 4–5 cm. longis; bracteolis indurato-clavaliculatis; floribus ignotis; capsula glabra circa 7 mm. longa.—Peru: Marsh, Mishuyacu, near Iquitos, Dept. Loreto, *Klug 940* (type, Field Museum).

No other species referred to the *Comosae* with indurate bracteoles has the small, sharply acuminate leaves of this plant. Nevertheless it has recently been determined as *C. peruviana* Koern., a species with much larger leaves, little oblique at the rounded-apiculate tip, and with soft bracts, rusty-pilose throughout. Perhaps the species is highly variable in these respects, but I can not believe it. The collector noted the flowers as lilac-color.

Calathea peruviana Koern. Bull. Soc. Nat. Mosc. 35[1]: 128. 1862.

Besides the Pavón specimen from Chicoplaya, I have seen *Weberbauer 1817* from La Merced (det. Loesener) and *Killip & Smith 23664* from Río Pinedo, north of La Merced. The last was determined as *C. velutina* (P. & E.) Koern., a species belonging in another group because of its thin bracteoles.

That the woods of Peru are filled with unclassified plants may be accepted as a truism after a glance at nearly any revision or

current taxonomic paper. Nevertheless, the numerous species I am proposing here, particularly in *Calathea* and *Ischnosiphon*, are, I am certain, mostly not new in the sense of new species acceptable by me in the flora of Idaho, for instance, although some of them are undescribed entities positively distinct from any known form. All of them, however, key out from all other Peruvian species, at least as interpreted by me, and accordingly I propose them as new because in working on a partially known flora it is the most practical device in building up its classification. To treat these different plants as varieties or to include them in previously described species by liberalization of original descriptions only, in most instances would make more difficult the monographer's work in unraveling the true relationships and determining the real specific lines.

Calathea silvosa, spec. nov., planta gracilis ad 6 dm. alta; foliis subtus, petiolis pedunculis inflorescentiisque conspicue sed vix dense cum pilis brunneis longissimis patentibus pubescentibus; petiolis solum inferne vaginatis circa 6 dm. longis; foliis supra glabris nitidis ut videtur utrinque viridibus, fere aequilateris et ellipticis, ad basin paullo angustatis, subacutis, apice subrotundatis et abrupte apiculato-acuminatis, circa 3 dm. longis, 1.5 dm. latis; pedunculis ut videtur elongatis; spicis subglobosis circa 6 cm. crassis; bracteis membranaceis valde depresso-patentibus ovato-lanceolatis, exterioribus ad basin coriaceis, glabris, acuminatis, circa 5 cm. longis, 12 mm. latis, interioribus vacuis late ovatis acutis circa 2–2.5 cm. longis, 1.5–1.7 cm. latis; sepalis glabris 17 mm. longis; corollae tubo 2.8 cm. longo, lobis oblongo-lanceolatis subacutis 10 mm. longis; staminodio obovato, circa 11 mm. longo, calloso paullo breviore ceteris simili; ovario glabro.—Peru: Woods, Mishuyacu, near Iquitos, Dept. Loreto, *Klug 11* (type, Field Museum).

A member of the series *Comosae*, but very distinct in pubescence. The long brown hairs, though uniformly distributed and conspicuous, do not conceal the surfaces. The flowers were noted by the collector as green and brown. The widely spreading, not at all imbricated, and subequal bracts give the inflorescence a striking appearance.

Calathea ulotricha, spec. nov., caulibus petiolis pedunculisque ignotis; foliis mediocriter inaequilateris late ellipticis ad basin rotundatis basi ipse acutis ad apicem abrupte longiacuminatis vel fere caudato-acuminatis 4 dm. longis et fere 2 dm. latis supra glabris nitidulis subtus minute denseque adpresse pilosis ubique viridibus; spicis cylindraceis 8 cm. longis 3 cm. latis vel cum floribus 5 cm. latis pallidis et dense cum pilis ochroleucis longissimis (ad 2 mm.) et brevissimis intermixtis molliter pubescentibus (sterilibus minus dense indutis); bracteis spiraliter dispositis, inferioribus subrhomboideo-ovatis rotundo-truncatis 2 cm. longis 1 cm. latis, superioribus steri-

libus ovato-lanceolatis obtusis sed ad apicem aliquid angustatis circa 5 mm. latis; bracteolis indurato-clavaliculatis fere 2 cm. longis; sepalis 10 mm. longis; floribus 2.5 cm. longis conspicue exsertis; corollae tubo glabro 18 mm. longo, lobis lanceolatis acuminatis 7 mm. longis; staminodium exterius 9 mm. longum obovatum obscure emarginatum.—Peru: Santa Rosa, Dept. Loreto, Lower Río Huallaga, *Williams 4921* (type, Field Museum).

In all probability a handsome plant, tall, with large leaves, and entirely at variance to all other species of the series *Comosae*. In its rather narrow, densely pale-pubescent inflorescence, indurate bracteoles, and acuminate leaves it possesses an unusual combination of characters.

Calathea jocosa, spec. nov., caulibus petiolis pedunculisque ignotis; foliis ubique viridibus supra glabris nitidulis subtus tenuissime denseque puberulis inaequilateris late vel rotundo-ellipticis basi rotundato-acutis apice rotundatis et brevissime acutis, 23 cm. longis, 15 cm. latis; spicis globosis circa 7 mm. crassis; bracteis glabris laxe imbricatis et valde divaricatis, exterioribus fere 5 cm. longis solum ad basin subcoriaceis oblongo-obovatis breviter acutis, sterilibus numerosis patentibus similibus paullo brevioribus; bracteolis membranaceis; floribus ignotis; ovario glabro.—Peru: Recreo, near Yurimaguas, Dept. Loreto, *Williams 3968* (type, Field Museum).

Meager as the material is, it seems that the plant must belong to the *Comosae*, although its glabrous inflorescence and subrotund leaves, pubescent beneath, comprise a character not found in any other species in that group. Possibly it is a member of the *Nudiscapae*, but there, even on its few known characters, it fits the description of no other species. Among Peruvian Calatheas it resembles most *C. silvosa*.

Calathea enclitica, spec. nov., gracilis vix alta glabra; foliis fere aequilateris elliptico-ovatis basi subacutis vel subrotundatis apice obtusis vel subacutis circa 1.5 dm. longis, 6.5–7 cm. latis, ut videtur pallide viridibus et concoloribus; pedunculis ut videtur 1.5 dm. longis; spicis turbinato-globosis cum bracteis 5–6 cm. longis; bracteis exterioribus coriaceo-chartaceis ovato-lanceolatis acutis vel acuminatis ad 4 cm. longis, interioribus valde patentibus membranaceis acutis circa 3 cm. longis, 10–12 cm. latis; bracteolis membranaceis; sepalis 12 mm. longis; corollae tubo ignoto, lobis circa 10 mm. longis; staminodium exterius obovatum 17 mm. longum, callosum ut videtur circa 12 mm. longum; ovario glabro.—Peru: Pebas, on the Amazon River, Dept. Loreto, *Williams 1955* (type, Field Museum).

More than likely this is a close ally of *C. colorata* (Hook.) Benth., notwithstanding the abundant technical differences. Its divaricate, not at all imbricate bracts seem to be a very similar development.

Its small leaves are noteworthy. It is unfortunate that only a portion of the petiole and peduncle is known.

Calathea Williamsi, spec. nov., ut videtur gracilis et humilis; petiolis longissime vaginatis 5–6 cm. longis; vaginis paullo angustatis fere 4 mm. latis dense strigosis; foliis plus minusve inaequilateris fere ellipticis basi subrotundatis apice definite acuminatis circa 1.5 dm. longis, 6–7 cm. latis, supra ut videtur viridibus sed molliter cum pilis rufis subpatentibus pubescentibus, subtus atropurpureis (vel rubris?) etiam dense subpatente albo-pilosis; pedunculis strigosis, recurvatis e centro foliorum, 3 cm. longis; spicis anguste cylindraceis 5 cm. longis, circa 1 cm. latis, rufo-villosis; bracteis distichis ad apicem fertilibus obovatis circa 1.5 cm. longis, 8 mm. latis vel infimis longioribus; bracteolis indurato-claviculatis; sepalis glabris, 8 mm. longis; corollae tubo glabro, 12 mm. longo, staminodium exterius circa 6 mm. longum; ovario glabro.—Peru: La Victoria on the Amazon River, Dept. Loreto, *Williams 2541* (type, Field Museum).

At first glance this species suggests *C. Legrelleana* (Lind.) Reg., but its spikes are evidently floriferous to the apex. I think, nevertheless, that its relationship is with that species, which probably belongs in the *Comosae.* The character of spiraled or distichous bracts is not always well marked.

Calathea Standleyi, spec. nov., ut videtur altissima et robusta; petiolis elongatis ad 10 dm. longis dense rufo-villoso-hirsutis exceptis 2 cm. ad apicem; foliis late ellipticis circa 4 dm. longis, 2 dm. latis, acuminatis ad basin rotundatis et breviter decurrentibus glabris utrinque metalico-caeruleis-coloratis; pedunculis circa 1.5 dm. longis ad medium vaginantibus; vaginis hirsuto-villosis fere 1 dm. longis et 1 dm. anguste productis; spicis ovoideis, circa 1 dm. longis, 5–6 cm. crassis, glabris ut videtur metalico-caeruleis; bracteis exterioribus late ovatis 4.5–5 cm. longis, 3–3.5 cm. latis vix acutis, interioribus fere acuminatis; bracteolis membranaceis; floribus paullo exsertis pallide flavis circa 4 cm. longis, glabris; calyce glabro 17–20 mm. longo; corollae tubo circa 3 cm. longo; staminodiis ut videtur subaequalibus circa 5 mm. latis, 8 mm. longis.—Peru: Puerto Yessup, Dept. Junín, *Killip & Smith 26263* (type, Field Museum).

This beautiful *Calathea* is surely comparable to *C. pachystachya* (P. & E.) Koern., of the *Scapifoliae,* a glabrous plant with elongate spikes but otherwise not, apparently, very diverse. In the single inflorescence I have not succeeded in removing a perfect flower. *C. contamanensis* Huber, though placed by the author in the *Nudiscapae,* seems from description to resemble our plant. Its leaves, however, are described as dark violet beneath and its bracts as only 1.5 cm. long.

Calathea mishuyacu, spec. nov., *C. exscapae* peraffinis; ubique fere glabra; petiolis longissime vaginatis saepe fere ad articulum,

vaginis membranaceis inferne 5 mm. latis; foliis haud manifeste inaequilateris obovato-ellipticis ad basin gradatim attenuatis, apice subabrupte et breviter acuminatis, ad 10.5 cm. latis, 1.5 dm. longis, ut videtur obscure zonatis; floribus fere ignotis, pallide flavis, ut videtur vix exsertis; bracteis coriaceis; sepalis circa 12 mm. longis; ovario apice paullo sericeo.—Peru: Mishuyacu, near Iquitos, Dept. Loreto, *Klug 416* (type, Field Museum).

Probably this species is much more distinct from *C. exscapa* (P. & E.) Koern. than I have realized. The material is not in good condition, the one flower remaining being broken. *Williams 7868* from Yurimaguas I have referred to *C. exscapa*, and it seems quite different in foliage and in texture of bracts, the latter being much softer than in our plant. The petioles of *C. exscapa* are figured by Poeppig and Endlicher as vaginate only at base. Unfortunately the material seen by me shows only the upper part of the petioles. A plant may bear a native name without modification. So, the Indian word "mishuyacu" may serve as the scientific name of this species.

Calathea Klugii, spec. nov., glabra humilis vix ultra 2 dm. alta, vulgo humilior radicibus rhizomatosis; petiolis longissime vaginatis, vaginis sensim attenuatis, 4–10 cm. longis; foliis anguste ovato- vel oblongo-lanceolatis aequilateris basi rotundatis apicem versus sensim acute acuminatis ad 12 cm. longis et 2 cm. latis interdum brevioribus et 1.5 cm. latis, utrinque viridibus vel ut videtur subtus plus minusve purpureis; spicis subturbinatis cum floribus circa 2 cm. longis et vix 1 cm. latis; bracteis paucis oblongo-ovatis subacutis glabris vel minutissime parceque puberulis, exterioribus circa 7 mm. longis, 4 mm. latis; sepalis glabris fere 9 mm. longis; floribus glabris albis et violaceis; corollae tubo 10 mm. longo, lobis lanceolatis vix 4 mm. longis, staminodio paullo longiore.—Peru: Mishuyacu, near Iquitos, Dept. Loreto, *Klug 532* (type, Field Museum); also *559*.

Certainly a member of the series *Rhizanthae*, but differing from all species with soft bracteoles in its narrow leaves, glabrous (or nearly) bracts, and small flowers. The peduncles may arise directly from the leaf base, apparently, and such individuals suggest the subgenus *Microcephalum*, which contains no species with so narrow leaves at the same time acuminate and equilateral.

Ischnosiphon Killipii, spec. nov., suffrutescens, scandens; caulibus ut videtur ramosissimis e nodis incrassatis; vaginis glabris circa 6 cm. longis; petiolis ad 7–7.5 cm. longis, articulo 3–6 mm. longo supra paullo hirsuto; foliis fere ellipticis basi rotundatis apice valde inaequilateri-acuminatis viridibus haud pallidioribus subtus glabris vel costa media et apice strigosa, plerumque ad 12 cm. longis et 5 cm. latis; spicis 12 cm. longis, 6 mm. crassis; bracteis glabris

circa 3.5 cm. longis; bracteolis induratis fere 3.5 cm. longis; floribus intense flavis geminatis; sepalis paullo puberulis 2 cm. longis; corollae tubo fere 4 cm. longo glabro, lobis anguste lanceolatis 12 mm. longis breviter pilosis, staminodio circa 1 cm. longo; ovario parce piloso.—Peru: Iquitos, Dept. Loreto, *Killip & Smith 26929* (type, Field Museum).

Apparently in habit allied to *I. gracilis* (Rudge) Koern., with different foliage (in color, shape, and size) and narrower spikes. In other respects it seems much nearer *I. surinamensis* (Miq.) Koern. and its apparent relatives, but its crowded leaves with exceptionally 1-sided tips afford a character, if important, as accepted by Schumann, that forbids its reference to any of these species.

Notwithstanding these affinities the same collection has recently been determined as *I. bambusaceus* (P. & E.) Koern., a plant with narrowly ovate-lanceolate (2–2.5 cm. wide), long-acuminate leaves, the tips not at all oblique. Of course, there is the question of specific values, but with only the two sheets before me and no intermediates, I can not consider them even varietally related.

Ischnosiphon verruculosus, spec. nov., scandens ad nodos tumescens; caulibus vaginisque verruculoso-tuberculatis; petiolis ad articulum vaginatis (articulus 1–2 cm. longus) scabris, vaginis valde productis; foliis utrinque viridibus glabris (vel apice puberulis) ovato-ellipticis basi rotundatis ad apicem definite inaequilateralibus acuminatis circa 1 dm. latis et fere 2 dm. longis; racemis solitariis vel geminatis ad 3 dm. longis circa 7 mm. crassis; bracteis minutissime puberulentis plerumque 3–3.5 cm. longis; bracteolis apice induratis 4 cm. longis conspicue exsertis; floribus flavis, rubris et violaceis circa 2.5 cm. exsertis; sepalis leviter pilosis lineari-acuminatis 3 cm. longis; ovario piloso; corollae tubo 2 cm. longo parce puberulo, lobis anguste lanceolatis distincte pilosis; staminodio circa 7 mm. longo.—Peru: Mishuyacu near Iquitos, Dept. Loreto, *Klug 430* (type, Field Museum).

The exceedingly rough upper internodes and sheaths recall *I. gracilis* var. *scabra* Peters, but this is a much coarser plant with larger and green leaves. It differs also from *I. gracilis* (Rudge) Koern. in its pilose ovary and small staminodium. Apparently the rough stems are distinctive in comparison with all species except *I. gracilis;* nevertheless its true relationship is with *I. aruma* (Aubl.) Koern., a large-leaved plant, with several racemes of larger flowers, to which species it has recently been referred but in which it could most doubtfully be included as a variety.

Ischnosiphon obliquiformis Loes. Notizbl. 6: 272. 1915.

This species, to which I had referred *Klug 1006*, may be considered by some as identical with *I. obliqua* (Rudge) Koern., since I find

the collection has recently been determined as the latter. However, Professor Loesener's judgment, in the absence of intermediate material, may be followed, and the material mentioned properly represents his species.

Ischnosiphon ornatus, spec. nov., *I. sphenophyllo* similis; vaginis pedunculis bracteisque fulvo-pilosis; petiolis ad 1.5 dm. longis (articulus 1.2 cm. longus) infra medium vaginatis supra glabratis vel puberulis; foliis aequilateris (acumine haud excentrico) oblongo-ellipticis basi cuneatis circa 6 cm. latis, 1.5–2 dm. longis, praeter costam mediam apicemque glabris, subtus pruinosis; spicis ad 17 cm. longis circa 6 mm. crassis; bracteis 2–2.3 cm. longis; bracteolis induratis solum 17 mm. longis; sepalis linearibus pilosis 15 mm. longis; corollae tubo puberulo 18 mm. longo, lobis linearilanceolatis 6 mm. longis; staminodio circa 5 mm. longo; ovario apice sericeo.—Peru: Yurimaguas, Dept. Loreto, *Williams 3870* (type, Field Museum).

Very possibly only a variety of *I. sphenophyllus* Schum., but spikes almost shaggy-pubescent and sheaths far from "glabrous." Besides, the bracteoles are much shorter, the corolla tube minutely pubescent, and the corolla lobes shorter and linear. *I. hirsutus* Peters, which I have not seen, seems to differ in its villous petioles and much larger leaves. Its flowers are unknown.

Ischnosiphon neotericus, spec. nov., glaberrimus ut videtur altus, erectus; petiolis solum inferne vaginatis ad 2.5 dm. longis, articulo 2 cm. longo; foliis membranaceis utrinque viridibus ellipticis aequilateris basi rotundatis apice fere abrupte caudato-acuminatis, acumine 2 cm. longo tenuissime producto; spicis solitariis circa 12 cm. longis 4 mm. crassis; bracteis valde convolutis 3 cm. longis glabris apice minute dentatis; bracteolis clavato-induratis 3.3 cm. longis; sepalis linearibus minutissime puberulis 18 mm. longis; floribus geminatis ut videtur roseis; corollae tubo 3.5 cm. longo glabro, lobis glabris lineari-lanceolatis 9 mm. longis; staminodio crispe crenulato 11 mm. longo; ovario glabro.—Peru: Iquitos, Dept. Loreto, *Williams 3761* (type, Field Museum).

Perhaps as near *I. surinamensis* (Miq.) Koern. as any species, but at once distinct by its paired flowers and long petioles. The plant seems to me to be entirely at variance to any described form.

Ischnosiphon wyomingensis, spec. nov., scandens, praeter inflorescentiam haud pubescens; vaginis 4–5 cm. longis; petiolis 1–1.5 cm. longis; foliis oblongo-ellipticis vel fere ellipticis basi rotundatis apice sensim mediocriter oblique acuminatis, acumine ipso subcaudato, 5–6 cm. latis et circa 1.5 dm. longis, supra fusco-olivaceis, subtus paullo pallidioribus; racemis ut videtur solitariis circa 2 dm. longis, 7 mm. crassis haud flexuosis; bracteis circa 3.5 cm. longis minute adpresseque sed definite puberulis; bracteolis

filiformibus apice induratis paullo vel vix exsertis; sepalis 3 cm. longis manifeste adpresse pilosis; corollae tubo conspicue villoso circa 3 cm. longo, lobis anguste lanceolatis 1 cm. longis; staminodio oblongo-lanceolato.—Peru: Mishuyacu, Dept. Loreto, *Klug 854* (type, Field Museum).

This could very easily be included in *I. surumuensis* Loes., but the bracts are closely puberulent, the corolla tube conspicuously pubescent, and the staminodium much narrower. *I. Uleanus* Loes. is similar, but it has larger leaves and slender flexuous spikes. The flowers were described by the careful collector as yellow and brown. The colors of Wyoming appear to have been planted in Peru. It gives me pleasure to give them botanical recognition there!

Monotagma anathronum, spec. nov., ut videtur peraffinis *M. doloso* sed petiolis longissime vaginatis (ad vel fere ad articulum), foliis 8–12 cm. latis et 2 dm. longis et paniculis haud spiciformibus; bracteis 2.5– fere 3 cm. longis superne pilosis; sepalis 1 cm. longis; corollae tubo glabro fere 2.5 cm. longo, lobis ellipticis circa 3 mm. longis; ovario glabro.—Peru: San Antonio, Río Itaya, Dept. Loreto, *Killip & Smith 29363* (type, Field Museum). Alto Río Itaya, *Williams 3251*.

Allied also to *M. spicatum* (Aubl.) Macbr. in the complete lack of annulus at the base of the callus, but the inflorescence accompanied by a leaf. It is therefore comparable also to *M. Ulei* Schum., to which Gleason refers it, but that species has densely villous spikes only a few centimeters long and a pubescent corolla tube only 1 cm. long.

Monotagma contrariosum, spec. nov., herba ut videtur humilis; petiolis late et fere ad articulum vaginatis circa 2 dm. longis, articulo fere 2 cm. longo supra brevissime piloso, annulo (a petiolo) prominente denseque hispido; foliis conspicue inaequilateris basi rotundatis, basi ipsa acuta breviter acuminatis, acumine valde excentrico, fere 2 dm. longis, 1 dm. latis, subtus cum vaginis pedunculis bracteisque pilosis, supra praeter costam glabris, ut videtur zonatis; paniculis angustis circa 12 cm. longis, rhachidibus conspicuis; bracteis circa 2 cm. longis; sepalis 1 cm. longis, hyalinis, glabris; corollae lobis valde cucullatis 5 mm. longis; ovario apice villoso.—Peru: Mishuyacu near Iquitos, Dept. Loreto, *Klug 116* (type, Field Museum).

This species would key only to *M. plurispicatum* (Koern.) Schum., because of the conspicuously annulate-barbed calloused petioles, but in its few-flowered pilose inflorescence it is markedly contrarious.

Monotagma dolosum, spec. nov., gracilis; caulibus superne petiolis foliisque subtus minute pilosis; petiolis circa medio vaginatis ad 18 cm. longis infra laminam crasse (5 mm.) callosis; foliis haud

vel vix inaequilateris ovato-ellipticis ad basin acutis ad apicem acuminatis, 6–7 cm. latis, plerumque 15–18 cm. longis, supra praeter costam dense et longe pilosam glabris; paniculis spiciformibus ut videtur axillaribus breviter pedunculatis paucis circa 1 dm. longis fere glabris; rhachidibus internodiis conspicuis; bracteis valde inovatis circa 17 mm. longis; floribus ut videtur albis solitariis sessilibus; sepalis 10 mm. longis; corollae tubo circa 12 mm. longo, glabro, lobis oblongo-ellipticis circa 2.5 mm. longis; staminodio (?) fere 5 mm. lato profunde emarginato.—Peru: Near Yurimaguas, Dept. Loreto, *Williams 5025* (type, Field Museum); also *5115*.

Simulating *M. parvulum* Loes., but in reality nearest, I think, to *M. anathronum*, from which it is distinguished chiefly by its nearly evaginate petioles and spikelike inflorescence.

Monotagma laxum (P. & E.) Schum., var. **oblongifolium**, var. nov., foliis oblongis 5.5 cm. latis, ad 3 dm. longis, ad apicem paullo obliquis; vaginis (semper?) ad basin dense longo-pilosis; sepalis circa 17 mm. longis.—Peru: Between Río Nanay and Río Napo, Dept. Loreto, *Williams 721* (type, Field Museum).

A plant apparently worthy a name, but there are connecting states.

Myrosma stromanthoides, spec. nov., caulibus petiolisque ignotis; foliis glabris late ellipticis basi cuneato-rotundatis apice breviter acuminatis subtus pallide viridibus supra ut videtur plus minusve purpureo-zonatis circa 7 dm. longis, 1.5–1.8 dm. latis; racemis plerumque 2–3; pedunculis laxe villosis, 1.5–5 cm. longis, longe bracteatis; bracteis inflorescentiarum circa 8–12 vix laxe imbricatis scarioso-chartaceis circa 1.5 cm. longis subrotundatis persistentibus; floribus 7–8 geminatis, pedicellis brevibus vel longioribus vix 2 mm. longis; sepalis 7 mm. longis; ovario glabro; capsula laevi 5 mm. longa.—Peru: Tarapoto, Dept. San Martín, *Williams 6563* (type, Field Museum); also *6017*. "Bijahuillo."

Pubescent Colombian forms of **Myrosma lutea** (Jacq.), comb. nov. (*Maranta lutea* Jacq.) are, from herbarium material, scarcely distinguishable in aspect from our plant. Typically, however, *M. lutea* is glabrous and the bracts finally caducous, and always, apparently, the flowers are two or few, the terminal with a pedicel 3 mm. long. It is unfortunate that the attachment of the leaves of our plant is unknown.

This plant calls to attention the similarity of *Stromanthe* Loud. Hamb. Gartenz. 5: 225. 1899, and *Myrosma* L.f. Schumann relied upon the diverse placement of the leaves (in the former antitropous, in the latter homotropous) to separate them. If this is properly a generic character, *Maranta Ruiziana* must be removed from *Maranta*, for its leaves are antitropous. If the character were supported by others it might seem to have significance, but in this case it is

not. On other characters there is no case for *Stromanthe*. The staminodium is equally developed and the bracts may persist in fruit in *S. lutea*, as evidenced above. Whether *Myrosma* should also include *Saranthe* Eichl. and *Ctenanthe* Eichl. is open to question, but probably at least the latter should be reduced.

For that matter, all generic lines in the Marantaceae, as drawn by Schumann, are certainly open to question. There is no evidence that many characters used by him to separate the groups result in natural divisions or in divisions that, practically in some instances at least, were not better regarded as sections of a well-defined genus. In the *Maranteae*, for example, there is a general segregation that is in logical accord with the generic acceptances in the *Phrynieae*, but why should one regard characters as of generic value in one instance and not in another, especially when they result in the disassociation of plants of apparent group affinity? That is, if the arrangement of the bracts is of importance as a generic character, why is it given prime recognition in one place and none at all in another? If the number of flowers is significant here, why not generically elsewhere? Or again, if the duration of the bracts is fundamentally important sometimes, why not always? Or the degree development (to absence) of staminodia? Obviously one should be able to answer these queries by pointing out that the characters mentioned in each instance are supported by others that, taken together, indicate natural groupings. Unfortunately such is not the true state of affairs. Even a casual consideration of the plants themselves suggests that in this family, as in many others, the lines of development have been so close that the only practical and reasonable treatment will be based not primarily on logic and arithmetic (as Schumann's so obviously is), but on *all characters as found* plus common sense. The result will be a classification less erudite in appearance, no doubt, but basically sound in so far as variable and perplexing nature permits. Discarding the commutation method, then, the *Maranteae* could conveniently include probably six instead of ten genera, namely, *Maranta, Myrosma, Ischnosiphon, Monotagma, Thalia* (of course excluding the section *Ammothalia* illogically maintained here by Schumann in defiance of his own generic key), and perhaps *Monophyllanthe*. A similarly elucidating realignment could readily be made for the *Phrynieae*.

3. OTHER PLANTS, CHIEFLY MORACEAE

Killip & Smith 27932 has been referred by Professor Mildbraed to *Pourouma sapida* Karst. but by the collectors to *P. cecropiaefolia*

Mart. I think this is one instance of misdetermination more apparent than real, for the validity of the Karsten species may well be questioned.

Cecropia Standleyi, spec. nov., arbor 3–6 m. alta; ramulis petiolisque plus minusve hispidulis haud lanuginosis; petiolis 1–2 dm. longis sulcato-striatis, basi intense rufo-tomentoso-callosis interdum etiam hispidulis; foliis subrotundatis ut videtur plerumque circa 3.5 dm. latis, supra viridibus ubique cum pilis nitidis submollibus haud asperis mediocriter pubescentibus, chartaceo-membranaceis nunquam bulboso-rugosis, subtus in areolis griseo- sed haud lanugino-tomentosis, costis venulisque plus minusve hirsutulis; foliis ad paullo infra medium 6–7-lobis, lobis sinu rotundato sejunctis late obovatis breviter acuminatis, superioribus multo majoribus, lobo medio 2–2.5 dm. longo, 10–12 cm. lato, nervis (in lobo medio) utrinque 12–15, 1–1.5 cm. distantibus; pedunculis breviter denseque hirsutulis circa 1–1.5 dm. longis; amentis masc. circa 8–10, 1 cm. longe pedicellatis, 9 cm. longis, circa 3 mm. latis, filamentis aequalibus, antheris non caudatis; amentis fem. 4 subsessilibus circa 18 cm. longis, 1 cm. crassis, perigonio leviter tomentoso fere 2 mm. longo, stigmatibus minute penicillatis.—Peru: Mishuyacu, near Iquitos, Dept. Loreto, *Klug 399* (type, Field Museum); also *Killip & Smith 27033* (fem.).

Among the twenty-five species of *Cecropia* known to grow in Peru are several that resemble this one in a general way, but none precisely, and in distinguishing Cecropias precision is necessary. Nearest among these several appears *C. ficifolia* Warb., with obtuse or barely acute leaf lobes, asperous above and white-tomentose beneath. Perhaps as nearly allied is *C. Klotzschyana* Miq., with distinctly rugose-bullate leaves, white beneath in the areoles with a felt-like pubescence and with fewer aments. Then there is *C. bicolor* Kl., but its leaf lobes are oblong; and the obscure *C. dentata* Trécul., its leaves described as 9-lobed, the lobes "dentate-subserrate," and white-tomentose beneath. Among extra-Peruvian species, *C. palmata* Willd. and *C. adenopus* Mart. only need be mentioned. The former differs in its tomentose pubescence and the latter in its thick aments. In the case of all these species I have indicated only the most obvious differences.

Pseudolmedia Mildbraedii, spec. nov., arbor 15 m. alta; ramis ramulisque brevibus griseo-brunneis glabris vel minutissime sparseque puberulentis, juvenilibus plus minusve angulatis; petiolis crassis 3 mm. longis; foliis numerosis elliptico-ovatis plerumque 8 vel 9 cm. longis et 4 vel 4.5 cm. latis, basi haud oblique sed breviter cuneato-acutis, apice plus minusve obscure obtuseque caudato-acuminatis vel interdum apicem versus solum angustatis et obtusis, glabris, coriaceis, supra ut videtur intense viridibus, tenuissime denseque reticulato-

venosis, nervis lateralibus circa 15 mediocriter undique prominulis brunneo-flavidis, venis subtus obscure reticulatis; receptaculis masc. discoideis 6 mm. latis; bracteis valde imbricatis circa 3-seriatis, sparse puberulis, marginibus tenuioribus sed vix vel paullo ciliatis, exterioribus late rotundatis interdum fere latioribus quam longis, circa 2 mm. latis, interioribus similibus sed 4 mm. latis et longis vel marginalibus (2–4) lanceolatis et 5 mm. longis; bracteolis lineari-spathulatis apicem versus tenuiter ciliatis circa 4 mm. longis; filamentis vix 0.5 mm. longis; antheris 1.5 vel 2 mm. longis, connectivo producto apiculatis et minutissime ciliatis.—Peru: Mishuyacu, near Iquitos, Dept. Loreto, *Klug 633* (type, Field Museum).

P. laevigata Tréc. has, according to description, thinner and smaller, oblong-lanceolate leaves, somewhat oblique at base, the 15–18 lateral nerves rather obscure, and scarious-ciliate-fimbriate-margined receptacle bracts. Otherwise *P. Mildbraedii* appears to be similar. The collector noted the flowers as "light yellow." They, i.e. the receptacles, are star-like, the narrow and elongate innermost bracts extending as points.

Professor Mildbraed should have many plants named for him in recognition of his friendly helpfulness in the furtherance of their study.

Pseudolmedia scabra, spec. nov., arbor 4 m. alta; ramulis foliisque undique dense scabro-puberulis; petiolis 5–7 mm. longis; foliis oblongo-ellipticis basi acutis paullo vel haud inaequilateris apice fere obtusis vel obtusis et apiculatis, plerumque 8 cm. longis et 3 cm. latis vel demum 11 cm. longis et 4.5 cm. latis, rigidiuscule coriaceis, supra viridibus, subtus pallidioribus; nervis lateralibus circa 9 cum veniis reticulatis, supra vix prominulis, subtus conspicuis; receptaculis masc. 2–3 in axillis foliorum fasciculatis, pedunculis 5–7 mm. longis tomentuloso-puberulis, globosis circa 5 mm. crassis; bracteolis spathulatis paullo apice incrassatis circa 1 mm. longis; filamentis tenuibus 1.5 mm. longis; antheris fere 1 mm. longis.—Peru: Mishuyacu, near Iquitos, Dept. Loreto, *Klug 384* (type, Field Museum).

To my surprise, upon dissection I found this Perebea-like tree must be referred to *Pseudolmedia,* for certainly there is no perianth as such, although two or three stamens may be borne together separated by as many bractlets from the nearest stamen or stamens. No other *Pseudolmedia* has the fine dense scabrosity of this species, nor has "*Brosimum Uleanum* Mildbr." to which it has recently been referred. But compare also *Perebea elegans!*

Admittedly, something is wrong in the classification of the Moraceae. Collections made since the days of Trécul, Bentham and Hooker, and Engler have presented many new problems that are not solved

satisfactorily by interpolation into the work of these earlier botanists, the method followed by Pittier and Ducke. As a result, we have a flock of small groups designated as genera that are purely academic, based on differences in one sex only, and, ignoring similarities, that result in the most similar of trees being separated generically, to no practical or scientific purpose. Or, at least, as regards the last, to no scientific purpose that could not be served more naturally and more conveniently by sectional groupings under fewer common (i.e. generic) names.

Perebea elegans, spec. nov., arbor usque 20 m. alta; ramulis junioribus leviter angulatis fulvo-tomentulosis demum glabratis; petiolis 5–7 mm. longis; foliis chartaceo-coriaceis oblongo-ellipticis basi paullo oblique acutis apice breviter caudato-acuminatis, ad 12 cm. longis, 5 cm. latis, plerumque minoribus, supra glabris, subtus pallidioribus minute praecipue ad nervos venasque puberulis; nervis lateralibus circa 12 solum subtus cum venis reticulatis mediocriter prominulis; receptaculis masc. pseudaxillaribus fasciculatis circa 3 (pedunculis vix 5 mm. longis) globosis 7 mm. crassis; bracteis minutis squamiformibus imbricatis; tepalis 4.1 mm. longis, apice valde incrassato-concavis vel -cucullatis minutissime puberulis; filamentis 4 crasso-cylindraceis, 2 tepalis distincte longioribus; receptaculis fem. ignotis.—Peru: Mishuyacu, near Iquitos, Dept. Loreto, *Klug 603* (type, Field Museum).

The floral structure is very similar to that of *Helicostylis,* and in the absence of pistillate material the generic identity can not be positive. The validity of *Helicostylis,* however, on the basis of a completely superior ovary and slender styles, may be questioned.

Among Perebeas our tree resembles most, apparently, *P. laurifolia,* from which its much smaller receptacles separate it. Nevertheless it has recently been named "*Brosimum Uleanum* Mildbr." Compare also *Pseudolmedia scabra!*

Perebea chimiqua, spec. nov., ad *P. guianensem* valde vergens, sed foliis basi rotundato-acutis haud cordatis, subtus distincte ubique scabriusculis, nervis lateralibus haud vel rarissime parceque hirsutulis; receptaculis masc. 5 mm. diam. (pedunculis circa 6 mm. longis); bracteis 3–4-seriatis late ovatis obtusis vel vix acutis fere 1.5 mm. latis, plus minusve strigosis; tepalis 4, apice paullo incrassatis; filamentis brevissimis; antheris subrotundatis fere 0.75 mm. latis.—Peru: San Antonio, Alto Río Itaya, Dept. Loreto, *Williams 3412* (type, Field Museum).

Ducke has remarked that the foliage aspect of *P. guianensis* Aubl. is that of *Castilla Ulei* Warb. One would never so describe our plant, for the leaves are not even slightly cordate. It is more scabrous than Aublet's tree and lacks (practically) the hirsutulous

hairs that, at least in some degree, are always present on the leaf nerves of the latter. The native name was recorded by the collector as "chimiqua."

Ogcodeia Tessmannii Mildbr. Notizbl. 10: 189. 1927.

Williams under number *3511* has found the hitherto unknown pistillate plant of this species—at least I refer it here with no hesitancy, so exactly does the foliage match the staminate material of Tessmann. Williams collected it along the Río Itaya at San Antonio, and noted the Quichua name as "naccho-huasu." The heads are subglobose, nearly 2.5 cm. thick, the inner series of large bracts triangular-ovate, acuminate, most minutely puberulent as also the rigid-aculeate bractlets 4–5 mm. long.

Ogcodeia tamamuri, spec. nov., ut videtur proxima *O. caloneurae* sed ramulis solum minutissime sparseque puberulentis et nervis venisque inconspicuis; foliis breviter (circa 1 cm.) caudato-acuminatis, plerumque circa 2 dm. longis, 6 cm. latis.—Peru: Timbuchi on the Río Nanay, Dept. Loreto, *Williams 992* (type, Field Museum).

This staminate specimen has the receptacles, bracts, and bractlets of *O. ternstroemiiflora* Mildbr., but more nearly the foliage of *O. caloneura* (Hub.) Macbr. It differs at once from *O. glabra* (Spruce) Mildbr. in its short petioles and relatively fine venation. So, as it is aberrant if referred to any of these three species, it at present at least, so far as the trees compared are concerned, requires a name of its own, which may well be the native one.

Ogcodeia Ulei (Warb.) Macbr. has been collected in Yurimaguas at Puerto Arturo by Williams (*5194*) and also by Killip and Smith who, however, consider their specimen as representing *Naucleopsis macrophylla* Miq., a disposition in which I can not agree.

Sorocea opima, spec. nov., fruticosa; ramulis sparse puberulis; petiolis 7–9 mm. longis; foliis oblongo-ellipticis integris vel undulato-marginatis chartaceis vix nitidis glabris supra obscure subtus conspicue reticulato-venosis, nervis lateralibus primariis circa 12, basi paullo inaequilateris subacutis vel rotundatis, apice caudato-acuminatis, acumine ad 2 cm. longo, ad medium 5 mm. lato, interdum fere 2 dm. longis et 6 cm. latis, vulgo minoribus; racemis fem. extra-axillaribus, dense puberulis, rhachidibus crassis, usque ad 5 cm. longis; fructibus demum glabris 1.5 cm. longis, 1 cm. crassis.—Peru: Caballo-cocha, Dept. Loreto, *Williams 2357* (type, Field Museum).

In its foliage most like *S. Ulei* Warb., with broader elliptic-obovate leaves. The large fruits appear to be distinctive.

Roupala Dielsii, spec. nov., arbuscula ubique glabra; ramulis gracilibus pauciramosis dense foliatis; foliis oblongo-ellipticis vel interdum paullo obovatis in petiolum brevem 3–5 cm. cuneato-attenuatis apice breviter late acuminatis, demum subcoriaceis, 10 cm. longis et 4 cm. latis supra nitidulis vix manifeste venosis, subtus opacis, venis lateralibus leviter elevatis obscure reticulatis, ad apicem haud prominente denticulatis infra medium undique integris; racemis folio subaequalibus glabris vel glabrescentibus, solum ovario rufo-tomentoso, cum floribus vix 2 cm. latis; pedicellis circa 3 mm. longis, floribus circa 3.5 mm. longis; stylo circa 6 mm. longo, stigmate distincte incrassato-clavato.—Peru: Along Río Itaya, Dept. Loreto, *Williams 114* (type, Field Museum).

The aspect of this shrub is not altogether that of *Roupala*, but the anthers are pedicellate and the stigma is terminal, in accord with the generic character. Its alliance is probably with *Roupala rhombifolia* but the red pubescence that, at least in some degree, is present in that species is here lacking, and the somewhat differently shaped leaves are borne on much longer petioles. There is also a floral difference.

Roupala Raimondii, spec. nov., ut videtur arbuscula; ramulis glabris, apice evanescenter rufo-pubescentibus, gracilibus, dense foliosis; foliis 4–7-jugis demum ad 2 vel 2.5 dm. longis, glabris; petiolis ad 4 cm. longis; foliolis oblique ovato-lanceolatis basi valde inaequalibus subintegris cuneatis, basi apiceque exceptis grosse spinescenti-serratis, ad 10–14 cm. longis et 3.5–4 cm. latis, terminali paullo majore, sed omnibus plerumque minoribus, venis venulisque utrinque obscure laxeque reticulatis, supra subnitidulis subtus opacis rufidulis; acumine integro, 1.5–2 cm. longo; dentibus plerumque 4 mm. longis, basi 2.5 mm. latis vel ad 6 mm. longis, basi 3.5 mm. latis, haud vel vix incurvis sensim apiculatis, sinubus definite acutis; racemis ignotis.—Peru: Crown of Sierras, Tarapoto, Dept. San Martín, 750 m., December, 1929, *Williams 5997* (type, Field Museum). Between Moyobamba and Tarapoto, *Raimondi* (Herb. Berol.).

With a number of names already available for sterile Roupalas with pinnate leaves, the wisdom of adding another to the list may be questioned, but expediency seems to sanction it in this instance. The original vegetation at Tarapoto has been largely destroyed, and since no collector except Williams of the many who have sought species in that locality have apparently found this shrub since Raimondi, it must be, as Williams indicates, rare. A definite record of it, therefore, may be worth while, especially as it does not seem to be the young foliage of a species with simple leaves on the older branches or it would by now have been found in the same region. *Roupala complicata* is known from Moyobamba, but I think it is always simple-leaved. Among pinnate-leaved species our plant

suggests *R. heterophylla*, *R. adiantifolia*, and *R. affinis*, but in the shape of the leaflets and in the nature of the teeth it is, precisely at least, separable. My description is drawn in part from Raimondi's leaves, but undoubtedly they are of the same species as Williams'.

Roupala complicata HBK. To this species I recently referred *Killip & Smith 24891* from San Ramón, Dept. of Junín, several other collections from the same region, and one from Tarapoto (*Williams 5703*). Weberbauer had earlier collected the same tree a number of times and in the Dahlem herbarium his specimens are determined without question as *R. complicata* HBK. A sheet of the latter, "ex herb. Humboldt," is at Dahlem; it is not too poor, and I should never have questioned the identity of the recent material with it if someone had not determined the latter as *R. Gardneri* Meisn.!

I think the diverse opinion rests mostly upon the question of the validity of the latter species. The Peruvian plant matches it slightly better in leaf form, the Colombian tree having mostly less acuminate leaves. In a series of specimens the differences in pubescence, including color, brought out by Meisner in DC. Prodr. 14: 428, appear to exist in degree. I must say that at present I see no reason for distinguishing the Peruvian tree, even if the Brazilian *R. Gardneri* is really another species.

Panopsis acuminata (Meisn.), comb. nov. *Andripetalum rubescens* Schott, var. *acuminatum* Meisn. in DC. Prodr. 14: 346. 1856.

Klug under his number *1540* has collected at Mishuyacu near Iquitos an exact match of the type of this species. The example found by Mr. Klug was 8 m. high with cream-colored flowers. With this confirmation of character, the plant seems to represent a species amply distinct from both *A. Sprucei* and *P. rubescens* in its thread-like but stiff pedicels 10–12 mm. long and glabrous inflorescence. Its leaves vary from acute to long-acuminate. It seems evident that *A. Sprucei* Meisn. op. cit. 347 is only a variety or more likely only a race of *P. rubescens*. In herbaria there is some confusion in the Spruce labels between *A. Sprucei* and *P. acuminata*, but the latter is at once marked by its pedicels.

Williams, under numbers *1121* and *1044*, has collected on the Río Nanay a variant of *P. rubescens* which has the characteristic fulvous-pubescent racemes and lax short pedicels of that species (including *A. Sprucei*) but conspicuously acuminate leaves. This small tree may be known as

Panopsis rubescens (Pohl) Schott, var. **simulans,** var. nov., foliis longe acuteque acuminatis.—Peru: Timbuchi on the Río Nanay, Dept. Loreto, *Williams 1044* (type, Field Museum). Also at Manfinfa, *Williams 1121.*

Vochysia diversa, spec. nov., glaberrima praeter inflorescentiam minutissime parceque puberulam; ramulis subteretibus fere nigrescentibus ut videtur decorticantibus; petiolis 0.5–1 cm. longis; foliis verticillatis rigido-coriaceis in sicco plus minusve nigrescentibus supra nitidulis subtus fere opacis, costis lateralibus ubique tenuibus paullo prominulis mediocriter reticulatis, oblongo-lanceolatis vel -ellipticis, basi sensim in petiolum attenuatis apice rotundatis interdum brevissime emarginatis haud mucronulatis, 8–12 cm. longis, 2.5–3.5 cm. latis; inflorescentiis anguste cylindraceo-pyramidatis circa 1–1.5 dm. longis, ad 3 cm. latis, cicinnis 1–2-floris; bracteis fere lineari-subulatis, ad 7 mm. longis; alabastris suberectis paullo clavatis circa 8 mm. longis; calycis laciniis quatuor majoribus, calcare clavato calyci haud aequilongo adscendenti-incurvo; petalis paullo obovatis; stylo glabro apice clavato.—Peru: Mishuyacu, near Iquitos, Dept. Loreto, *Klug 685* (type, Field Museum).

A tree 20 m. high with yellow flowers; apparently very similar to *V. venulosa* Warm., but the petioles much shorter and the leaves narrower. It is distinguishable from *V. Weberbaueri* Beckmann by its oblongish leaves, solitary (–2) flowers, and prominent bracts.

Qualea impexa, spec. nov., glaberrima pedicellis calycibusque plus minusve (vix sericeis) puberulis exceptis; ramulis ut videtur non decorticantibus; petiolis gracilibus 1 cm. longis; foliis ellipticis circa 1 dm. longis, 4.5 cm. latis, basi rotundatis, apice abrupte caudato-acuminatis, acumine obtuso ad 8 mm. longo, imprimis praecipue subtus ad marginem junctim reticulatis, marginibus valde undulatis, flexili-coriaceis; cicinnis in racemos 1- vel paucifloros dense paniculatim dispositis; alabastris ovato-conicis, pedicellis subaequalibus circa 1.5 cm. longis; calcare quam pedicellis bene breviore, dependente, elongato-obovoideo, 7 mm. longo, 3 mm. crasso; petalo late obcordato ad 3.5 cm. longo ad basin breviter unguiculato glabro; anthera marginibus haud barbato; ovario sericeo-pubescente.—Peru: Mishuyacu near Iquitos, Dept. Loreto, *Klug 748* (type, Field Museum).

There are probably more names already for Amazonian Qualeas than there are species, as many descriptions read very much alike and many specimens look enough alike (I have not seen all the recently described ones). No description or specimen that has come to my notice seems to conform in all respects to *Q. impexa*—perhaps most nearly *Q. macropetala* Spruce. Mr. Klug noted the tree as 24 m. high, with yellow flowers. They are so congested that they appear snarled.

Dichapetalum stipulatum, spec. nov., scandens; ramulis praecipue ad apicem dense fulvo-villosis, demum glabratis, stipulis tarde deciduis ovato-lanceolatis circa 5 mm. longis fere pinnatifido-fimbriatis; petiolis 3 mm. longis; foliis coriaceo-chartaceis supra costa media excepta glabris subtus ad nervos solum plus minusve fulvo-villosis, nervis lateralibus primariis circa 6 supra cum venis reticulatis rugoso-impressis subtus valde prominentibus, late ellipticis, circa 14 cm. longis, 8 cm. latis, basi rotundatis vel subcordatis, apice abrupte breviter acuminatis; inflorescentia corymboso-paniculata dense rufo-villosa multiflora, ad 1 dm. longa, 1.5 dm. lata; pedicellis 5 mm. longis; petalis "pallide brunneis" circa 2 mm. longis, late spathulatis, profunde bifidis; filamentis anguste marginatis glabris; styli ramis 2; ovario dense piloso.—Peru: Mishuyacu near Iquitos, Dept. Loreto, *Klug 1081* (type, Field Museum).

An extraordinary species by virtue of the stipules and the sunken leaf veins, but the flowers very much like those of *D. pedunculatum* Baill.

Tapura coriacea, spec. nov., arbor glabra; ramulis griseo-albis leviter angulatis subcontortis; petiolis 5–8 mm. longis; foliis oblongo-ellipticis, basi cuneato-subrotundatis, acutis, apice subabrupte caudato-acuminatis (acumine ad 1 cm. longo, obtuso), plerumque 8–10 cm. longis, 3.5–4 cm. latis, coriaceis, supra nitidis, nervis vix notatis, subtus opacis nervis venisque inconspicuis; floribus circa 10 ad medium fere petioli insertis, flavis, 5 mm. longis; pedicellis 2 mm. longis cum calyce 4 mm. longo sordide puberulis; sepalis inaequalibus obtusis; corollae lobis ut videtur solum 3 valde dissimilibus, majoribus 2 obovatis apice breviter bifidis, valde 2-cucullatis, intus cum tubo villoso-lanatis, minoribus subrotundatis; stamina fertilia 3 inter se aequalia.—Peru: Mishuyacu near Iquitos, Dept. Loreto, *Klug 602* (type, Field Museum).

Perhaps nearest *T. guianensis* Aubl., but the flowers much smaller and the stamens equal. There are certainly only 3 fertile stamens, but otherwise the structure of the corolla and the foliage seem to resemble greatly *T. capitulifera* Baill. (ex char.).

Trigonia virens, spec. nov., liana; ramulis et imprimis costis petiolisque plus minusve subadpresse hirsutulis; foliis adultis demum circa 12 cm. longis, 5–6 cm. latis praeter petiolum et costas fortiores utrinque glabris vix nitidulis, basi acutis vel obtusis, apice subabrupte in acumen longiusculum acutum productis, membranaceis; costis circa 5–8 subtus mediocriter prominulis; inflorescentiis (calycibus solum extus) subviridi-cano-tomentosis 4–8 cm. longis; cicinnis nunc 1- nunc 2–3-floris racemose dispositis; pedunculis 2–3 mm. longis quam pedicellis vix longioribus; bracteis anguste ovato-lanceolatis ad 4 mm. longis; alabastris circa 5 mm. longis; calycis laciniis fere 5 mm. longis; petalis circa 6 cm. longis, 2 carinatis late oblongis.—Peru: Wooded banks of Río Itaya above Iquitos, Dept. Loreto, *Killip & Smith 29539* (type, Field Museum).

Probably as nearly allied to *T. hypoleuca* Griseb. as to any other species, but glabrate; otherwise comparable to *T. Spruceana* Benth. and *T. macrantha* Warm. Its thin and broad leaves distinguish it from the former; its pedunculate flower clusters and hirsutulous leaf nerves from the latter.

Killip and Smith have collected at the same locality (as well as Klug at Mishuyacu) *T. sericea* HBK. of Colombia, or at least I see no pronounced differences. More to have been expected was *T. najadum* Warm., from the upper Amazon, but our material has lenticellate branches and matches well enough the Dahlem Humboldt specimen.

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